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**Keeping it in the family: the self-rated health of lone mothers in different European welfare
state regimes**

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Abstract

This study examines whether there are health inequalities between lone and cohabiting mothers across Europe, and how these may differ by welfare state regime . Data from the European Social Survey are used to compare self-rated general health, limiting longstanding illness and depressive feelings by means of multi-level logistic regression. The 27 countries included in the analyses are classified into five welfare state regimes (Anglo-Saxon, Bismarckian, Southern, Nordic, Central-Eastern). Results indicate that lone mothers are more at risk of poor health than cohabiting mothers. This is most pronounced in the Anglo-Saxon regime for self-rated general health and limiting longstanding illness, while for depressive feelings it is most pronounced in the Bismarckian welfare state regime. However, while the risk difference is smallest in the Eastern and Southern welfare regime, this is due to the overall poor health status of all mothers. Adjusting for the socioeconomic position weakened that association between lone motherhood and ill health. However, while employment and poverty were associated with subjective general health and limiting longstanding illness in lone mothers, feelings of depression were mainly buffered by education.

INTRODUCTION

Previous research has indicated that lone mothers, compared to cohabiting mothers are at higher risk for poverty, unemployment because of lack of affordable childcare, employed in low-pay, low-status occupations, and are at higher risk of social exclusion (Lewis 2006). Their disadvantaged socio-economic situation has also been associated with a number of health problems. Compared to cohabiting mothers, lone mothers are more likely to report general health problems (Burstrom et al. 2010; Fritzell et al. 2007; Whitehead et al. 2000), and mental health problems (Brown and Moran 1997; Targosz et al. 2003). Lone mothers are therefore one of the most vulnerable groups in society. Variations between countries in the pattern of lone mothers' employment and poverty rates have been widely documented (e.g. Kilkey and Bradshaw 1999). This suggests that welfare state regimes may differ in the nature and quality of social rights conferred to women, and how paid work and care is reconciled. To date, analysis of the moderating effect of different welfare state arrangements on the health status of lone mothers has been hampered by a lack of comparative cross-national data. The few studies that have looked at the topic present mixed results. Burstrom and colleagues (2010) found that the gap in health between lone and cohabiting mothers was smaller in Italy, than Sweden and Britain. Lahelma and colleagues (2002) found that in Britain, the disadvantaged social position of lone mothers accounted to a greater proportion of poor health than in Finland. In contrast, Whitebread and colleagues (2000) showed that the magnitude of the differential between lone and cohabiting mothers was similar in Sweden compared to Britain. In this study, we are the first to make use of cross-national data from the European Social Survey which covers the general population in almost all European countries and covers the full geographical range of Europe (West, North, South and East). The data allows us to analyze to what extent inequalities in health exist between lone and cohabiting mothers and how this varies by welfare state regime.

THEORETICAL BACKGROUND

Pathways to Ill Health amongst Lone Mothers

Pathways leading to ill health are often explained using the stress-and-vulnerability model, which describes the relationship between the stressors the individual is exposed to and the way the individual reacts (Pearlin 1989). Next to a number of biological and psychological risk factors, a large variety of social risk factors have been identified in the literature. At the individual level, certain social positions are associated with different probabilities of exposures detrimental to health. For example, low education or unemployment is often associated with health risks such as bad housing, poverty, negative health behaviors, and overall feelings of powerlessness (Mirowsky and Ross 2003). Whether an exposure leads to ill health or not is in part dependent on the presence of other risk factors as well. Lone mothers are often exposed to several health risks at once, and these may further interact to produce higher susceptibility (Fritzell et al. 2007).

The current literature on the health of lone mothers suggests a number of pathways to ill health. Most research focuses on their disadvantaged socioeconomic position; lone mothers are at higher risk of unemployment or worklessness, they are less likely to work full-time than other women, and they are more likely to be employed in low wage parts of the economy (Benzveval 1998; Kilkey and Bradshaw 1999). They are also less likely to have enjoyed education opportunities, putting them at a higher risk of poverty (eg. lone mother poverty rate versus overall poverty rate in Germany, 31% versus 8%; in Sweden, 11% versus 7%; in the UK 40% versus 14%; in Spain 29% versus 14% (Luxembourg Income Study, 2000)). The links between a disadvantaged socioeconomic position and ill health are well established (Mackenbach, et al. 2008; Mirowsky and Ross 2003). In addition, as the sole carer of a child and the sole possible breadwinner in a family, the dual responsibility of lone mothers to provide both cash and care is likely to represent an extreme in the tensions between paid work and care responsibilities. Dual roles have been posited as a reason behind the inequalities in morbidity found amongst men and women (Bambra et al. 2008). Further, the literature on work-life balance, work-family conflict and work-care responsibilities suggests that imbalance and tensions in such relationships can be health damaging. For example, Netemeyer and colleagues (1996) found an association between increased work-family conflict and physical ill health and Frone and colleagues (1997) found a strong association between work-family conflict and depression, poor physical health, hypertension and alcohol misuse.

Welfare State Regimes and Lone Mothers

Since Esping-Andersen's (1990) *The Three Worlds of Welfare Capitalism*, many researchers have used the concept of welfare state regimes in comparative social policy research. His typology was based upon three dimensions: the nexus of state and market in the distribution system, the quality of social rights as reflected in decommodification, and the stratifying effects of welfare entitlements. While Esping-Andersen made a major contribution to the field of comparative macro social-policy research, criticisms were made of his original typology which mostly related to the limited number of countries included, their categorization within a certain regime, and the insufficient consideration of gender (Sainsbury 1999). Several alternative typologies have since been developed including those which integrate issues of defamilisation alongside decommodification (e.g. Lewis 1992; Bambra 2004). Defamilisation refers to the extent to which the welfare state undermines women's dependency on the family and facilitates women's economic independence (Lister 1998; Bambra 2004). The structure of modern welfare regimes have never provided well for those who were marginal in some way to the labor market, as in the case with many lone mothers. In general, only widows have been able to rely on derived benefits, consisting of social insurance benefits paid for by their husbands' contributions. These are invariably higher than the mean-tested social assistance benefits that the growing proportion of divorced and unmarried mothers extract from the 'absent' father (Lewis 2006). This is particularly important when considering how welfare state regimes treat lone mothers.

Resonating with the recent recognition of the importance of the macro social and political context in determining health (Diez-Roux 2000), many researchers have started to examine how different national welfare arrangements influence population health (Bambra 2007a). The underlying assumption is that welfare regimes are important determinants not only of the socio-economic position, but also of health, as they mediate the health effects of socio-economic position. Welfare regimes can additionally help to explain gender differences in health as well, as they act as a force in ordering gender relations (Bambra et al 2008). They are deeply implicated in shaping women's access to an independent income. They may support women's waged labor, by providing services and cash transfers that reduce both the burden of women's domestic labor and the costs entailed in undertaking

paid work (Orloff 1996; Sainsbury 1999). Additionally, the welfare regime itself may present an important source of employment for women (Meyer 1994). The type of welfare state regime may also award those not engaged in the labor market with an independent income. Depending on the amount, method, and conditions of payment, child benefits, extended parental leave-programmes, social assistance when child-rearing responsibilities preclude the obligation to seek work, and carer's allowances can represent an important economic resource to women. Conversely, by not facilitating women's access to an independent income, welfare policies may also reinforce their dependency on men. Lone mothers' living conditions are therefore particularly sensitive to the setup of welfare policies and how women in such situations are treated, therefore may be the quintessential example of how welfare states construct the relationship between paid work and caring for all women (Kilkey and Bradshaw 1999).

In the current study, we make use of Ferrera's (1996) typology, which distinguishes four welfare state regimes: the Anglo-Saxon regime, the Nordic regime, the Bismarckian regime, and the Southern regime. They differ with respect to the main source of financing for care (private purchase, income taxation, pay-roll taxation), the main place where care takes place (private services, public services, the family), and the amount and the channels of resources directed to the needy (cash transfers or transfers in kind by the state, private intra-family transfers). While the Anglo-Saxon and Nordic regime are very different in design and final outcomes, they are similar because they foster more 'symmetric' gender relations. In contrast the Bismarckian and Southern welfare regime are 'asymmetric', because they direct men and women towards different types of work, unpaid care work in the case of women and paid non-care work in the case of men (Addis 2002). We prefer this typology to Esping-Andersen's classification, because in contrast to the latter, it is not only based on cash benefits, but also considers welfare services, including child care and social services which are of importance in terms of defamilisation and gender stratification within the welfare state (Bambra 2004). The Ferrera typology has also been used extensively in previous comparative sociology of health research (e.g. Bambra and Eikemo 2009; Bambra et al 2008) and has been shown to be empirically robust (Bambra 2007b).

The first regime type groups the **Nordic** countries. It is characterized by a universalistic approach to social rights, a high level of decommodification, in addition to promoting gender equality both on the labor market and in care tasks (Fritzell et al. 2007). This benefits lone mothers in a number of ways. Subsidized public day care for children is widely available, encouraging high rates of employment among lone mothers (Allen 2003). The provision of housing allowances supports families and lone mothers with limited incomes with good accommodations (Scheiwe 2003). In addition, child maintenance transfers and other need-based social assistances schemes for lone mothers are provided by the state (Bergmark and Palme 2003).

In contrast, the **Anglo-Saxon** welfare model provides only limited social insurance. Its social programs are directed mainly toward the working class and the poor, and means-tested assistance is prevalent. It grants mothers the time to care for their children by offering financial assistance on the basis of their caring status – although recent changes have placed age restrictions on this (for example in the UK there is now a requirement to seek work once the youngest child is 5). However, the regime is weak in respect of the social rights attached to paid work and the transition from care-giving to paid work, which may act to constrain lone mothers' choice to do other than full-time caring (Kilkey and Bradshaw 1999). There is only limited publicly funded child care. Therefore, lone mothers are predominantly full-time carers as opposed to engaging in paid work, resulting in relatively high rates of poverty (Kilkey and Bradshaw 1999).

The **Bismarckian** welfare regime was traditionally set up to support the male-breadwinner system, with a focus on cash-transfers to households rather than on the direct provision of services (Bussemaker and van Kersbergen 1994). The family is selected as the unit of benefits, with welfare provisions being conferred upon the head of the household. Female labor force participation is generally discouraged through tax disincentives or even explicit policies (van Kersbergen 1995). A wife has been entitled to benefits only when she has become the head of the household through the death of her husband (widow pensions). Benefits for women in case of divorce have typically been absent. In recent years, some of the Bismarckian countries have adopted policies to facilitate child care with employment. The Netherlands provide high replacements rates for non- or part-time working lone

mothers, while France and Belgium offer extensive service and parental employment rights. However, most other Bismarckian countries welfare policies remain highly familized.

The **Southern** welfare regime is typified by high levels of familialism as the family has a central role in the organization of both employment and welfare (Tavora 2012). The state does not support families' normal functioning, but only covers social risks against which the family cannot protect itself. In contrast to the other welfare regimes, the subject interacting with welfare agencies may be the extended family, rather than the nuclear one (Trifiletti 2012). Generous protection is provided to full-time workers on the official labor market, while no guarantee of a minimum income is provided for those outside the labor market. Care work is taken for granted and female employment is low. However, women in employment almost always work full-time and, only in this case, get benefits and access to social services through their worker status. Because social protection covers women mainly on the basis of their marital status, special provisions for lone mothers are nearly absent (Lewis and Ostner 1994). In addition, unmarried and widowed mothers are often granted more provisions than divorced or separated lone mothers. However, the likelihood of full-time employment is considerably higher in lone mothers than cohabiting mothers (Fadiga Zanatta 1996), due to the lack of social protection, and the informal support from the extended family in care tasks.

In the current study we add a fifth welfare regime for the post socialist countries of **Central and Eastern Europe**. Research incorporating these countries into a welfare regime typology is still scarce, and recent transition make it uncertain to identify which type of welfare model they will converge with. The former socialist era supported women as workers and socialized many costs of motherhood and care work (Pascall and Manning 2000). This resulted in high female labor participation at a much earlier date than even in the West (Molyneux 1990), although it remained gender segregated. However, this region has recently experienced extensive economic upheaval and has undertaken comprehensive social reforms throughout the 1990s (Kovacs 2002). They have emphasized the Liberal regime approaches of marketization, decentralization and the reform of health insurance schemes (European Communities and World Health Organisation 2002), putting people outside of the job market especially at risk for health problems. Along with mass employment, many of the social assistance provisions previously distributed through the workplace as well as public child

care arrangements diminished. In addition, most countries in this region have no special provisions for lone mothers, making them especially susceptible for health risks.

Study aim and hypotheses

The aim of the current study is threefold. First, we will determine whether lone mothers suffer more from health problems than cohabiting mothers in all welfare states. Different aspects of health are assessed by distinguishing between subjective general health, limiting longstanding illness and feelings of depression. In line with the available research, we expect that lone mothers will report more health problems than cohabiting mothers in all welfare regimes. Second, we will examine whether this health gap differs by type of welfare regime. We expect that welfare states with high levels of universalism and policies targeted at defamilisation will benefit the health status of mothers in general. Welfare state generosity is one of the most influential factors explaining cross-national differences in health risks such as poverty (Brady et al. 2009). However, we expect that lone mothers will be even more sensitive to the set up of these welfare policies. Third, we will look at differences in the pathways linking lone motherhood to ill health, by examining well-established health risks such as poverty, low education and non-employment (Mackenbach et al. 2008; Van de Velde et al. 2010). We expect that controlling for socioeconomic risk factors will weaken that association between lone motherhood and poor health, but to what extent will depend on the type of welfare regime.

Our study utilizes survey data from the European Social Survey, covering most European countries, which we categorize into five regimes based on Ferrera's (1996) classification, plus an additional category for Central-Eastern Europe. An overview of the data descriptive is provided in the Appendix (Table A1).

METHODS

Data

We based our analyses on data from the European Social Survey (ESS), which collected information on subjective health by means of three indicators: self-reported subjective general health,

limiting longstanding illness and depressive feelings. The first two indicators were included in the first four ESS waves (2002-2008, covering 27 countries), while the depression-related indicator was only included in the third ESS wave (2006, covering 23 countries). The data and extensive documentation are freely available for downloading at the Norwegian Social Science Data Services web site (www.nsd.uib.no). ESS information is representative for all individuals in the general population aged 15 and older living in a private household. The ESS selected respondents using strict probability samples of the resident national population aged 15 or older living in private households irrespective of their language, citizenship, and nationality. Proxies were not allowed. Data was gathered via face-to-face interviews. In our analyses, we restricted ourselves to women, aged 18-55 years, with children aged 18 years or younger in the household. A weight was applied in all analyses to correct for design effects due to sampling designs in countries where not all individuals in the population have an identical selection probability. The merged data file was additionally weighted to adjust for country presence across the different waves ($= \text{total number of respondents} / \text{total number of countries} / (\text{number of respondents in country X})$). The unweighted sample consisted of 26,499 respondents (3619 lone mothers) in the merged dataset, and of 6603 (753 lone mothers) in the ESS wave 3 file.

Self reported general health was constructed from a variable asking; ‘How is your (physical and mental) health in general?’. Eligible responses were ‘very good’, ‘good’, ‘fair’, ‘bad’, and ‘very bad’. We dichotomized the variable into ‘very good or good health’ versus ‘less than good’ health (‘fair’, ‘bad’, and ‘very bad’). As for limiting longstanding illness, people were asked if they were hampered in daily activities in any way by any longstanding illness or disability, infirmity or mental health problem. Eligible responses were ‘yes a lot’, ‘yes to some extent’ and ‘no’. We dichotomized this variable into ‘yes’ (regardless of whether to some extent or a lot) and ‘no’. Depressive feelings were assessed using an eight-item version of the Center for Epidemiologic Studies Depression Scale (CES-D 8). Respondents were asked to indicate how often in the week previous to the survey they felt or behaved in a certain way (felt depressed, felt that everything was an effort, slept badly, felt lonely, felt sad, could not get going, enjoyed life, or felt happy). Response categories forming a 4-point Likert scale ranged from *none or almost none of the time* (0) to *all or almost or all of the time* (3).

Respondents were grouped into two categories: Low degree of depressive feelings (summed CES-D score between 0 and 9) and high degree of depressive feelings (summed CES-D score of 10 and 24).

Singlehood was measured by comparing those who were living together with a partner, regardless of their marital status, with those who were not cohabiting with a partner, therefore capturing the factual rather than legal status of cohabiting. Socioeconomic position was measured by employment status, educational level and presence of poverty. Employment status was coded as a dummy variable, with persons either in paid employment (1) or not (0). Educational level was measured by the total number of years in full-time education. Respondents who deviated more than three standard deviations from the national mean were capped off to the closest valid number. Poverty was defined as less than 50 percent of the country's median income (Not in poverty = 0; in poverty = 1). All results are age-adjusted.

Analysis

Table 1 presents prevalence rates of ill health (poor/fair general subjective health, limiting longstanding illness and depressive feelings) for the total sample, for only lone mothers, as well as the rate differences. Results were age standardized by means of the European Standard Population. Additionally, relative health inequalities (odds ratio's) were calculated applying a series of multi-level logistic regression analyses, in which lone motherhood was introduced as an independent variable, adjusted by age, with health outcomes as the dependent variables. An odds ratio of 1 indicates that the event (ill health) is equally likely to happen in both cohabiting and lone mothers. An odds ratio above 1 indicates that the event is more likely to happen in lone mothers compared to cohabiting mothers. An odds ratio of less than 1 indicates that the event is less likely to happen in lone mothers compared to cohabiting mothers. Furthermore, we examined the extent to which the association between the weakened socioeconomic position of lone mothers and ill health varies across welfare regimes. Results are presented in Table 2.

To test the robustness of the main findings, three sensitivity analyses were performed: First, one-way ANOVA was used to examine whether the between welfare regime difference is greater than the within welfare regime difference in ill health. A significant result of the F-test would provide

support for this. Second, the degree to which welfare regimes explain cross-national variation in the health status of lone mothers is examined using the interaction ‘lone motherhood*regime’ within a multi-level design. The Anglo-Saxon regime was used as reference category, allowing us to compare if and where largest differences between welfare regimes could be established. In addition, a decrease in the size of the country variance will allow us to gauge the magnitude of variation in the health outcomes that is explained by Ferrera’s welfare regime typology. Finally, additional adjustments were made for between regime differences in the association between health and lone motherhood in terms of the socio-economic position (unemployment, low education, and poverty), allowing us to examine the degree to which health differences between lone and cohabiting mothers can be explained by socioeconomic differences.

RESULTS

Health differences between lone and cohabiting mothers by welfare regime.

Table 1 shows that Central-Eastern European welfare regimes have the highest prevalence of poor general subjective health, as well as depressive feelings among women with children, regardless of whether they are single or cohabiting. Limiting longstanding illness is also high in the Central-Eastern welfare regimes, but even more pronounced in the Nordic regime. The Southern European regime also shows high prevalence of poor general subjective health as well as depressive feelings. However, respondents with limiting longstanding illness are lowest in number in this regime compared to the rest of Europe. The dissimilar report of ill health between limiting longstanding illness and general subjective health as well as depressive feelings in the South is relatively large. This might suggest that limiting longstanding illness is understood differently in the South from elsewhere. In all regimes, we find that the prevalence of poor general subjective health is higher than that of depressive feelings, while that of limiting longstanding illness is lowest, with the exception of the Anglo-Saxon regime, where the prevalence general subjective health is lower than that of depressive feelings.

A closer look at the difference in health status between cohabiting and lone mothers reveals that overall this last group suffers more from ill health than cohabiting mothers. In all regimes this

difference is significant, with the exception of poor subjective general health in the Central-Eastern and Southern regime and limiting longstanding illness in the Central-Eastern regime. However, in both regimes the overall prevalence of poor health is notably higher among cohabiting mothers as well. The difference in health status between lone and cohabiting mothers is most pronounced for depressive feelings, with smallest difference found in the Nordic regime and largest in the Bismarckian regime. According to the size of rate differences and OR's, it appears that the negative health experiences of lone mothers are particularly strong in the Anglo-Saxon regime as well.

Insert Table 1 here

The sensitivity analyses (presented in appendix table A2) show that within-welfare regime variance is significantly smaller than between-welfare regime variance for measures of prevalence and relative equalities and for all measures of ill health. A closer look at the differences between specific welfare regimes shows that adding the welfare regime typology to the model decreases the level of country variance substantially for all ill health indicators (appendix table A3). The difference in ill health of lone mothers is most pronounced between the Anglo-Saxon and Southern, as well as Central-Eastern regime for general subjective health. Concerning the association between limiting longstanding illness and lone motherhood, it was most pronounced between the Anglo-Saxon and Nordic regime, as well as the Central-Eastern welfare regime. However, welfare regimes are unable to explain the significant association between feelings of depression and lone motherhood, indicating that social policies and services are less able to affect individual risks for depression.

Socioeconomic Health Risks in Lone Mothers by Welfare State Regime.

Table 2 shows the association of the socio-economic position of lone mothers with health problems by welfare state regime. These results allow us to examine to what extent socioeconomic risks are differently associated with ill health in lone mothers across welfare regimes. Overall, poor general subjective health is associated with lower education, unemployment and poverty in all welfare state regimes. Lone mothers who enjoyed fewer years of education, who are not in paid employment and those living in poverty are more likely to report poor general subjective health than lone mothers who enjoyed more education, employment and a higher income. However, this association is less

pronounced in the Southern regime, where lower educated lone mothers and those living in poverty do not report more general health complaints than lone mothers from higher socioeconomic groups. In addition, poverty is also unrelated to poor general subjective health in lone mothers in the Nordic welfare regime, while unemployment does not help to explain health differences in lone mothers in the Central-Eastern welfare regime. A comparison between welfare regimes shows that the association between socioeconomic position and health varies by type of welfare regime. Lower education is more harmful for subjective general health in the Nordic regime, while the effect is smaller in the Southern and Bismarckian regime. Similarly unemployment shows a stronger association in the Nordic regime, but this social stressor explains even more of the difference in health between lone and cohabiting mothers in the Anglo-Saxon regime. Finally, while poverty is related to more general health problems in both the Anglo-Saxon, Bismarckian and to a lesser extent Central-Eastern regime, it is unrelated to general subjective health in the Nordic and Southern regimes.

Additionally, the results show that the socioeconomic position of lone mothers is less strongly related to limiting longstanding illness. With the exception of the Central-Eastern regime, lower education and poverty do not help to explain differences in limiting longstanding illness in lone mothers. In contrast, unemployment is strongly related to ill health in lone mothers across all welfare regimes, with the exception of Central-Eastern regime. Either limiting longstanding illness is thus less sensitive to the presence of social stressors, or different mechanisms are at play when analyzing general subjective health versus limiting longstanding illness.

Finally, it seems that only lower education is related with the presence of depressive feelings in lone mothers across Europe. Except in the Nordic regime, the more education a lone mother enjoyed, the less likely she is at reporting depressive feelings. In contrast, unemployment is unrelated to depression in lone mothers in the European welfare regimes, while poverty only places Bismarckian lone mothers more at risk for depression.

Insert Table 2 here

An additional sensitivity analysis looks at the degree to which these socioeconomic risk factors help explain differences in ill health between lone and cohabiting mothers (appendix table A4). While in general lone mother are more likely to be unemployed, living in poverty, and less educated

than cohabiting mothers, this difference in socioeconomic position fully explains the difference in the degree of depressive feelings between cohabiting mothers and lone mothers in the Anglo-Saxon and Nordic regime. In the other regimes, the decrease was smaller and could not fully account for the differences in health between cohabiting and lone mothers. Similarly, adjusting for the socioeconomic position explains a part of the difference in subjective general health and limiting longstanding illness in the different welfare regimes, but does not fully account for the difference between lone and cohabiting mothers. Thus, lower education, poverty and unemployment put both lone and cohabiting mothers at risk for ill health, these risks factors are in general even more harmful to the health of lone mothers. However, this differences depends on the type of welfare regime and type of health problem.

DISCUSSION

Our study provides evidence for the hypothesis that welfare regimes help to explain health differences between lone and cohabiting mothers. First, with a few exceptions, our data show that in all welfare regimes lone mothers suffer more from health problems than cohabiting mothers. This difference is most pronounced in the level of depressive feelings, while differences in the level of general subjective health and limiting longstanding illness between lone and cohabiting mothers are smaller. Thus, while the health risks associated with lone motherhood affect both somatic and psychological aspects of health, they seem to be especially detrimental for the latter. Comorbidity of psychological and physical health has been widely documented in the literature. However, varying prevalence rates of the different health measures indicate that they capture distinctive aspects of health, rather than a general underlying subjective well-being index. Lone mothers who bear sole responsibility over housework, childcare and family income are often confronted with a low sense of control that reflects their role overload (Rosenfield 1989). People who do not feel in control of their lives are less likely to attempt to solve problems (Mirowsky and Ross 2003). This sense of powerlessness, which lone mothers are confronted with often, is a critical trigger of an increase in depressive feelings. Our results showed that while employment and poverty were associated with subjective general health and limiting longstanding illness in lone mothers, feelings of depression were

mainly buffered by education. Education plays a critical role in the path to wellbeing because it is a resource itself and the human capital it indicated helps people generate other resources such as employment and income. In addition, education has been linked to learned effectiveness, while its absence breeds learned helplessness, a key psychological element in depression (Ross and Mirowsky 2006). The current paper assessed the contribution that these poor socioeconomic circumstances of lone mothers make to their relative health disadvantage. In doing so, however, it is important to bear in mind other potential explanations for their relative health position. Previous research also focused on the psychosocial health damaging effects of the lack of an intimate relationship, health selection into lone motherhood, the stress associated with becoming a lone parent, and the stigma associated with being a lone mother (Benzeval 1998). In many countries lone motherhood is associated with social stigma either for non-compliance with social norms around the nuclear family, or for receipts of social assistance. Social stigma can lead to ill health via the stress-and-vulnerability model as well as via social exclusion. The reader should bear in mind that these psychosocial health risks might also contribute to the health difference between lone and cohabiting mothers.

Second, our study results also show that the size of the health gap between lone and cohabiting mothers varies by the type of welfare regime. Our results are in line with the research findings of Lahelma and colleagues (2002), who established a larger health difference between lone and cohabiting mothers in Great Britain than Sweden, and contradict those of Burstrom and colleagues (2010), who found the opposite, as well as Whitebread and colleagues (2000) who could not establish any difference between welfare regimes. Overall, our data reveal similar prevalence patterns across the different aspects of ill health. In the Central-Eastern welfare regime in both cohabiting and lone mothers overall levels of ill health are high, and the health gap between the two groups small. The Central-Eastern welfare regime seems less able to moderate many of the health risk that affect both groups of women. High prevalence rates of ill health in Central-Eastern Europe compared to the rest of Europe have been confirmed in previous studies (Kunst et al. 1995). Several suggestions have been put forward as explanations of this East-West divide, eg. various behavioral patterns, such as heavy smoking and drinking (Peto et al. 1992; Leon et al. 1997), insufficient health care provisions (Bobak and Marmot 1996), and the social stagnation and social disorganization of these societies after the fall

of communism (Watson 1995; Shapiro 1995). With a welfare regime, highly dependent on a male-bread winner system, women seem to suffer even more from this than men (Van de Velde et al. 2010).

The more favorable 'women-friendly' social policies in Scandinavia are reflected in lower than average rates of depression among both cohabiting and lone mothers, and the difference between the two groups is small as well. A sensitivity analysis indeed shows that differences in socio-economic status between lone and cohabiting mothers fully explains the gap in depressive feelings, but not in the somatic health indicators. Prevalence rates of self-rated general health are not lower than average, and are above average for limiting longstanding illness. A number of authors have proposed that the effect of relative deprivation may be more extensive in the Nordic welfare regime (Eikemo et al. 2008; Huijts and Eikemo 2009), perhaps explaining why the Nordic model is not among the best performing welfare regime in terms of health equality. However, it remains unclear why this pattern is not reflected in the rates of depressive feelings in the current study.

During the last two decades, all welfare regimes have intensified the linkage between labor markets and welfare, with new forms of conditionality being imposed via welfare-to-work schemes, making citizens' welfare, regardless of gender increasingly dependent on their success in the labor market. Within Europe, only the Nordic welfare regime has its policies based on the assumption that both men and women are fully engaged in the labor market, while other welfare regimes continue to promote more traditional roles and relationships, and tax systems still family-based rather than individualized. However, to varying degrees women's work has been broadly encouraged across all regimes and the care of, and support for, children has also become more of a policy priority. The Nordic welfare regime, where daycare was developed much earlier, has an advance. The trend in welfare regime restructuring towards an adult worker model family increasingly assumes that more care will become commodified and that women will become paid rather than unpaid carers

The three other Western-European welfare regimes however still lack behind, and this is reflected in a clear health gap between lone and cohabiting mothers. The Anglo-Saxon, Bismarckian and Southern welfare regime have average levels of ill health, with the exception of the Anglo-Saxon regime, where the prevalence of general subjective health is the lowest of all of Europe. However, in all three regimes lone mothers report worse health than cohabiting mothers, and the health gap

between the two groups of women is most pronounced in these regimes. It thus seems that lone mothers benefit less from welfare provisions than cohabiting mothers, making them more dependent on their family, in case of the Bismarckian and Southern welfare regime, or the market, in case of the Anglo-Saxon welfare regime. This difference was particularly pronounced in the Anglo-Saxon regime, typified by high privatization of child care and low social assistance rates, as well as in the Bismarckian regime, where part-time work is encouraged. Social stigma may also be a factor behind these results with lone parenthood and benefit receipt more stigmatized in these regimes. A recent study by Brady and Burroway (2012) additionally showed that means-tested targeted programs towards lone mothers were less effective in reducing health risks such as poverty, than welfare universalism. Scholars have argued that welfare universalism is more effective because of its social policies tend to be more extensive, and it has also been associated with less health risks for all groups. In that sense, the better health status of lone mothers in universalist welfare regimes such as the Nordic regime might as well be a byproduct of its broader social equality.

Our study has some important implications for European societies. Given the significant prevalence of lone mothers in some countries, and their increased occurrence in most advanced capitalist countries, lone mothers are not simply a marginal case in the sphere of social rights (Hobson 1994). Estimates from the United Kingdom for example, suggest that while by the turn of the century one-quarter of children will be living in a lone-mother family, at least one-third and possibly one-half, of children are likely to have experienced this family form before they leave dependency (Ford and Millar 1998). Thus, it would appear that in some countries, lone motherhood has become another stage in the female life-cycle. Research on the health of this group of women does not only give us a unique way of studying welfare regimes, but also tells us how a rising group of women are treated by society and underpins the importance of defamilising welfare state regimes within the context of an increasingly feminized European workforce.

Limitations

Some limitations of our study are worth noting when interpreting the results. Although the ESS-3 presents an outstanding opportunity for comparisons of health differences in lone and

cohabiting mothers across welfare regimes, some of the issues that affect the comparability of multi-country studies, like selective nonresponse, differential modes of data collection, translation and conduct, may not be eliminated completely. If these issues are related to any of the health indicators or the independent variables, some bias in the estimates cannot be excluded. Our study is further limited because it utilizes only self-reported measures, and these may vary by country, culture and position within society. However, a multigroup confirmatory factor analysis based on the CES-D 8 scale in the third wave of the ESS has shown that feelings of depression can be compared validly between the nations and sexes (Van de Velde et al. 2010). An additional limitation relates to the low number of lone mothers used for some parts of the analysis. While subjective general health and limiting longstanding illness were examined using four waves of the European Social Survey, depressive feelings were only assessed in a single wave, making the sample size of lone mothers much smaller. The large confidence intervals of the association between poverty and depressive feelings in the Nordic and Southern region will most likely result from small sample size. However, analysis results in the other regimes and with the other health risks showed acceptable confidence intervals.

Additionally, the welfare typology we used in the current study is mainly based on the amount of financial incentives and services, but says little about the quality of those services. Research has shown that mothers' actions are not primarily based on the financial costs of childcare nor on the financial (dis)incentives embedded in tax and benefit policy. This means that women are more likely to engage in paid employment when they find a solution for care, but this solution should fit their notions of what good care is (see also Lewis 2003). European mothers only take up a job when they are satisfied with the solution for childcare. Good quality childcare – which suits their view on good-enough care – is a necessary condition for going to work (Kremer 2005).

Finally, we defined lone motherhood on the basis of the factual situation, that is whether or not someone is cohabiting with a partner, regardless of her current marital status. We were therefore better able to capture health risks related to the dual responsibility of sole child care and income maintenance. However, welfare provisions exclusively granted to lone mothers based on their marital status are not captured in this operationalisation. In addition, the extent to which couples share responsibilities and resources is variable, making the situation of some cohabiting mothers akin to that

of lone mothers. Similarly, some non-resident fathers may maintain responsibilities in the functions of child-rearing, making the distinction between lone-mother families and cohabiting families blurred. Moreover, the emergence of alternative living arrangements among cohabiting families, 'living apart together', for example, may also weaken the distinction. Bearing these reservations in mind, the current study was interested in lone mothers as mothers who in the absence of a partner, must assume sole or primary responsibility for the material and emotional well-being of their children.

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Table 1: Prevalence rates, rate differences and odds ratios (95% CI) for each welfare regime separately.

	Poor/fair general subjective health				Limiting longstanding illness				Depressive feelings			
	Prev. (%)	Single (%)	(RD)	OR (95% C.I.)	Prev. (%)	Single (%)	(RD)	OR (95% C.I.)	Prev. (%)	Single (%)	(RD)	OR (95% C.I.)
Anglo-Saxon	15.1	22.2	9.49	2.02(1.59- 2.56)	13.1	17.2	4.35	1.94(1.50- 2.50)	17.3	24.3	8.69	2.16(1.35- 3.45)
Bismarckian	21.6	29	8.08	1.64(1.30- 2.08)	14.8	19.4	4.81	1.67(1.43- 1.96)	16.4	28.8	12.79	3.32(2.48- 4.43)
Nordic	19.2	21.2	1.75	1.36(1.16- 1.60)	22.9	28.3	5.89	1.37(1.26- 1.50)	10.9	17.0	7.47	2.09(1.40- 3.13)
Southern	22.1	24.9	2.33	1.04(0.73- 1.47)	6.3	7.3	1.09	1.43(1.11- 1.86)	18.0	29.7	16.69	2.11(1.21- 3.68)
All Eastern	41.9	46.3	5.24	1.16(0.96- 1.41)	19.4	20.3	1.03	1.03(0.89- 1.20)	24.1	40.9	20.66	2.48(1.77- 3.48)

Table 2: The Association between ill health and socioeconomic risk factors among lone mothers.

	Anglo-Saxon	Bismarckian	Nordic	Southern	Central-Eastern
	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)	OR (95% C.I.)
General subjective health					
Education	0.92(0.87-0.98)	0.95(0.91-0.99)	0.89(0.84-0.94)	0.96(0.90-1.02)	0.91(0.87-0.96)
Employment	0.39(0.25-0.59)	0.61(0.41-0.90)	0.40(0.26-0.60)	0.57(0.35-0.93)	0.79(0.59-1.06)
Poverty	1.69(1.17-2.46)	1.75(1.28-2.41)	0.65(0.36-1.18)	1.33(0.78-2.26)	1.34(1.22-1.48)
Limiting Longstanding Illness					
Education	0.95(0.89-1.01)	0.98(0.94-1.02)	0.98(0.93-1.03)	1.00(0.92-1.08)	0.93(0.87-0.99)
Employment	0.32(0.20-0.51)	0.37(0.26-0.55)	0.35(0.24-0.52)	0.33(0.17-0.66)	0.71(0.45-1.13)
Poverty	1.19(0.80-1.76)	1.01(0.66-1.55)	0.85(0.50-1.44)	0.89(0.41-1.90)	1.90(1.57-2.30)
Depressive feelings					
Education	0.87(0.78-0.98)	0.92(0.85-0.99)	0.92(0.82-1.04)	0.87(0.77-0.98)	0.86(0.79-0.95)
Employment	0.52(0.24-1.13)	0.73(0.51-1.04)	0.74(0.27-2.02)	0.63(0.23-1.71)	1.00(0.64-1.57)
Poverty	1.33(0.64-2.78)	1.95(1.04-3.66)	2.48(0.92-6.73)	1.80(0.60-5.39)	1.38(0.74-2.56)